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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/589,079

Applicant(s)

SCHIESSL, GERHARD

Examiner

Vanessa Velasquez

Art Unit

1793

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 April 2010.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 26-44 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 26-44 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/CD)
Paper No(s)/Mail Date 4/2/2010
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

Status of Claims

Claims 1-25 are canceled. Claims 34-44 are newly added. Claims 26 and 31 are amended. Currently, claims 26-44 are pending and presented for examination. Of the pending claims, claim 26 is independent.

Status of Previous Rejections Under 35 USC § 112

The previous rejection of claim 31 under the second paragraph of 35 U.S.C. 112 is withdrawn in view of the amendments to the claim.

Status of Previous Rejections Under 35 USC § 103(a)

The previous rejections in the Office action dated 1/5/2010 are maintained. However, in light of the newly added claims and the amendments to independent claim 26, new grounds of rejection are introduced (below).

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on 4/2/2010 was filed after the mailing date of the non-final Office action on 1/5/2010. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

It should be noted that the reference to Wosnizok was not considered because a statement of its relevancy in the English language has not been received as required by MPEP § 609.04(a)(III).

Claim Rejections - 35 USC § 112, First Paragraph

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claim 38 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention. Specifically, there is no support in the specification for the limitation that the second manufacturing process is continuous.

Claim Rejections - 35 USC § 103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
5. Claims 26-29 and 32-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grange (US 3,337,376) in view of Schmoeckel ("Metal Forming (Warm): Comparison with Hot and Cold Forming," Vol. 6, *Encyclopedia of Materials*)

and Hodge et al. (US 3,057,050), and optionally further in view of Grange (US 3,891,474, hereafter Grange '474). Claims 26-29, 32, and 33 remain rejected for substantially the same reasons described in the Office action dated 1/5/2010.

Regarding the amended portion of claim 26 and new claim 39, Grange teaches that the steel may be cooled to room temperature (col. 2, lines 29-31, 68-70). Grange does not explicitly teach a "storing" step as claimed. However, allowing the steel to cool to room temperature and placing it temporarily aside before re-austenitization, as implicitly disclosed by Grange in the oil quench examples (col. 3, lines 62-64; col. 4, lines 31-35), broadly translates into storage step, as one of ordinary skill in the art would expect the steel to have sit idle for some period of time before being rapidly heated in the second heating step.

Still regarding the amended portion of claim 26 and new claim 39, Grange does not explicitly teach the claimed "storing" step. However such a step is well known in the art, as evidenced by Grange '474. Grange '474 teaches a double austenitization heat treatment wherein the steel is carburized above the A_3 (fully austenitized) temperature, allowed to cool to room temperature, stored at room temperature, and then subsequently heated to re-austenitize the steel above the A_3 temperature (FIG. 1; col. 2, lines 46-50; col. 3, lines 12-20). The storing step may be desired for several reasons, such as protecting the cooled steel before it is reheated in the next furnace as the next furnace may be fully occupied or protecting the steel before it is transported by a vehicle to the next processing plant, for example. Therefore, it would have been obvious to one

of ordinary skill in the art to have stored the cooled steel before reheating in the case the steel could not be immediately reheated for at least the aforementioned reasons.

Regarding new claim 34, it is implicit in Grange and Grange '474 that in order to move the cooled steel to the area in which it is stored (Grange – into or out of oil quenching bucket – col. 3, lines 62-64; col. 4, lines 31-35; Grange '474 – storage area – col. 2, lines 46-50; col. 3, lines 12-20), it would have to be transported.

Regarding new claims 35 and 36, Grange teaches that the first austenitization takes place in one process (col. 2, lines 6-10), and the second rapid re-austenitization takes place in another process (col. 3, lines 19-22). These heating steps are separate heating steps (decoupled).

Regarding new claims 37 and 38, each heating step is continuous because the heating in each process is not interrupted (first austenitization: col. 2, lines 6-10; col. 3, lines 58-62; second austenitization: col. 3, lines 19-22).

Regarding new claims 40-42, the first austenitization heating takes place in a furnace of some type (location/facility) (col. 2, lines 6-10; col. 3, lines 58-62), and the second austenitization takes place in a molten salt or lead bath (another location/facility) (col. 3, lines 19-22). Note that facility is interpreted as a place or device that provides a specific service or function.

6. Claims 30 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grange in view of Schmoeckel and Hodge et al., and optionally in view of Grange '474, as applied to claim 26 above, and further in view of Hassell et al. ("Induction Heat Treating of Steel," Vol. 4, *ASM Handbooks*). Claim 30 remains rejected for substantially the same reasons described in the Office action dated 1/5/2010.

Regarding new claim 44, Grange in view of Schmoeckel, Hodge et al., and optionally in view of Grange '474 teach conducting the second austenitization heating step by induction (inductor) heating (Grange, col. 3, lines 19-22), but do not teach the induction heater as being a transport device. Hassell et al. teach that induction heaters may be automated in order to facilitate workhandling of steel workpieces ("Workhandling Equipment," second paragraph). One aspect of the automated apparatus includes moving (transporting) the steel workpiece through the induction field ("Workhandling Equipment," first paragraph). It would have been obvious to one of ordinary skill in the art to have utilized an automatic transport apparatus containing an induction heater, as disclosed by Hassell et al., in the process of Grange because it would make Grange's process more efficient.

7. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Grange in view of Schmoeckel and Hodge et al. and optionally in view of Grange '474, as applied to claim 26 above, and further in view of Brodt et al. (US 2002/0069506). Claim 31 remains rejected for substantially the same reasons described in the Office action dated 1/5/2010.

8. Claim 43 is rejected under 35 U.S.C. 103(a) as being unpatentable over Grange in view of Schmoeckel and Hodge et al., and optionally in view of Grange '474, as applied to claim 42 above, and further in view of Smith ("Continuous Furnaces," Vol. 4, *ASM Handbook*).

Regarding claim 43, Grange in view of Schmoeckel, Hodge et al., and optionally in view of Grange '474 teach that the second austenitization heating step may take place in an induction heater (induction furnace) (Grange, col. 3, lines 19-22). Grange is silent as to the type of furnace used in the first austenitization heating step. Smith teaches that continuous furnaces are known in the art for heat treating steel (page 1 of 11). Several advantages of using a continuous furnace include easy adaptability for automated heating, ability to heat large quantities of workpieces, and ability to carry out and reproduce heat treatments with precision and accuracy (Smith, page 1 of 11, paragraphs 1-3). It would have been obvious to one of ordinary skill in the art to have utilized a continuous furnace, as disclosed in Smith, in the method of Grange because a continuous furnace would be able to perform the initial austenitization treatment of Grange quickly, efficiently, and accurately.

Response to Arguments

Applicant's arguments filed 4/2/2010 have been fully considered but they are not persuasive.

First, Applicant argues that Grange teaches that the steel is heated rapidly after it has cooled to room temperature; therefore, it is not stored at room temperature for an interval of time. In response, the rapid reheating in Grange refers to the speed at which the steel is re-heated to the austenitization temperature. Grange teaches that the time of arriving and staying at the austenitization temperature is brief (see col. 3, lines 11-22). Even if the steel were re-heated immediately after cooling to room temperature, it would have stayed at room temperature for some period of time. The claim does not specify the length of that period (interval) of time; therefore, any period of time would read on the claim.

Second, Applicant states that the limitations of claim 28 were not addressed. In response, attention is kindly directed to page 5 of the previous Office action.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vanessa Velasquez whose telephone number is 571-270-3587. The examiner can normally be reached on Monday-Friday 9:00 AM-6:00 PM ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King, can be reached at 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ Roy King/
Supervisory Patent Examiner, Art
Unit 1793

/Vanessa Velasquez/

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Examiner, Art Unit 1793